

Quality Uncompromised

**ROTEL**®

# Technical Manual

## STEREO POWER AMPLIFIER RB-870BX

### Table of Contents

Specifications . . . . .	1
Adjustment . . . . .	2
Parts List . . . . .	2
Wiring Diagram . . . . .	3, 4
Schematic Diagram . . . . .	5, 6

### Specifications

Continuous Power Output . . . . .	100 watts* per channel, min. RMS both channels driven into 8 ohms from 20 to 20,000 Hz with no more than 0.03% total harmonic distortion.
DIN Power Output . . . . .	200 watts per channel (1 kHz, 4 ohms, 1% THD)
Peak Current . . . . .	50 A (0.1 ohms, 10 $\mu$ sec, 1 pulse).
Bridged Power . . . . .	300 watts (mono) min. RMS driven into 8 ohms from 20 to 20,000 Hz with no more than 0.05% total harmonic distortion.
Total Harmonic Distortion . . . . . (20 to 20,000 Hz)	No more than 0.03% (continuous rated power output) No more than 0.03% (continuous 1/2 rated power output) No more than 0.03% (1 watts per channel power output, 8 ohms)
Intermodulation Distortion . . . . . (60 Hz : 7 kHz = 4 : 1)	No more than 0.03% (continuous rated power output) No more than 0.03% (continuous 1/2 rated power output) No more than 0.03% (1 watt per channel power output, 8 ohms)

Output . . . . .	Speaker 8 ohms nominal
Damping Factor . . . . .	180 (20 to 20,000 Hz, 8 ohms)
Input Sensitivity/Impedance. . . . .	1.0V/2 kohms
Frequency Response . . . . .	4 to 100,000 Hz, +0.5 dB, -3.0 dB
Signal-to-Noise Ratio (IHF A network) . . . . .	110 dB
Power Requirement . . . . .	120V/60 Hz, 220V/50 Hz, 240V/50 Hz or 120, 220, 240V/ 50-60 Hz (switchable) (depending on destinations)
Power Consumption . . . . .	500 watts
Dimensions (overall) . . . . .	430(W) x 109(H) x 315(D) mm 16-15/16" x 4-7/32" x 12-13/32"
Weight (net) . . . . .	9.4 kg/20.68 lbs.

- Specifications and design subject to possible modification without notice.
- \*Measured pursuant to the Federal Trade Commission's Trade Regulation Rule on Power Claims for Amplifiers (applicable to the U.S.A. only).

Serial No.  
Beginning

**THE ROTEL CO., LTD.**  
**ROTEL ELECTRONICS CO., LTD.**

1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN  
3RD FLOOR, ROTEL BLDG., NO. 35 FUSHING, NORTH  
ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA

## Parts List

Schematic Location	Computer No.	Description	Schematic Location	Computer No.	Description
Q601	0322SA1016-FG		D607	034DS135C	
Q602	0322SA1016-FG		D901	034IS1588	
Q603	0322SA1016-FG		TH601	034TD5C350D	Temperature Compensator
Q604	0322SC1941-KL		VR601	051SF687A-2K	Bias Adj.
Q605	0322SB605-KL		RY901	0630RZ-SS224L	Relay
Q606	0322SB631K-EF		S901	064C-4173A05	
Q607	0322SD600K-E	Idling Driver	C001	044DE7150F472M	Spark Killer
Q608	0332SD600K-EF	Driver	S001	061C-4176A02	Power Switch
Q609	0332SB631K-EF	Driver	T001	022T-1016G01	Power Transformer
Q610	0332SD1047-DE	Power Driver	D001	034SEL1124R	Power Indicator
Q611	0332SD1047-DE	Power Driver			
Q612	0332SD1047-DE	Power Driver		011PF4-13A00	Front Panel
Q613	0332SB817-DE	Power Driver		0124TR-2176	Knob (Power)
Q614	0332SB817-DE	Power Driver		0143TR-2349	Ornamental Side Plate
Q615	0332SB817-DE	Power Driver		0143TUV-6#4	Upper Cover
Q901	0322SC2362-FG			017C-4322A01	Head Sink
D601	0341S1588			017C-4323A00	Sub Heat Sink
D602	0341S1588			066C-4225A04	2P Pin Jack (Input)
D603	034DS135C			0673TR-2045#3	Output Terminal (Red)
D604	034DS135C			0673TR-2045#4	Output Terminal (Black)
D605	034K BPC804	Rectifier		069C-4304A01	Voltage Selector
D606	0341S1588				

## Adjustment

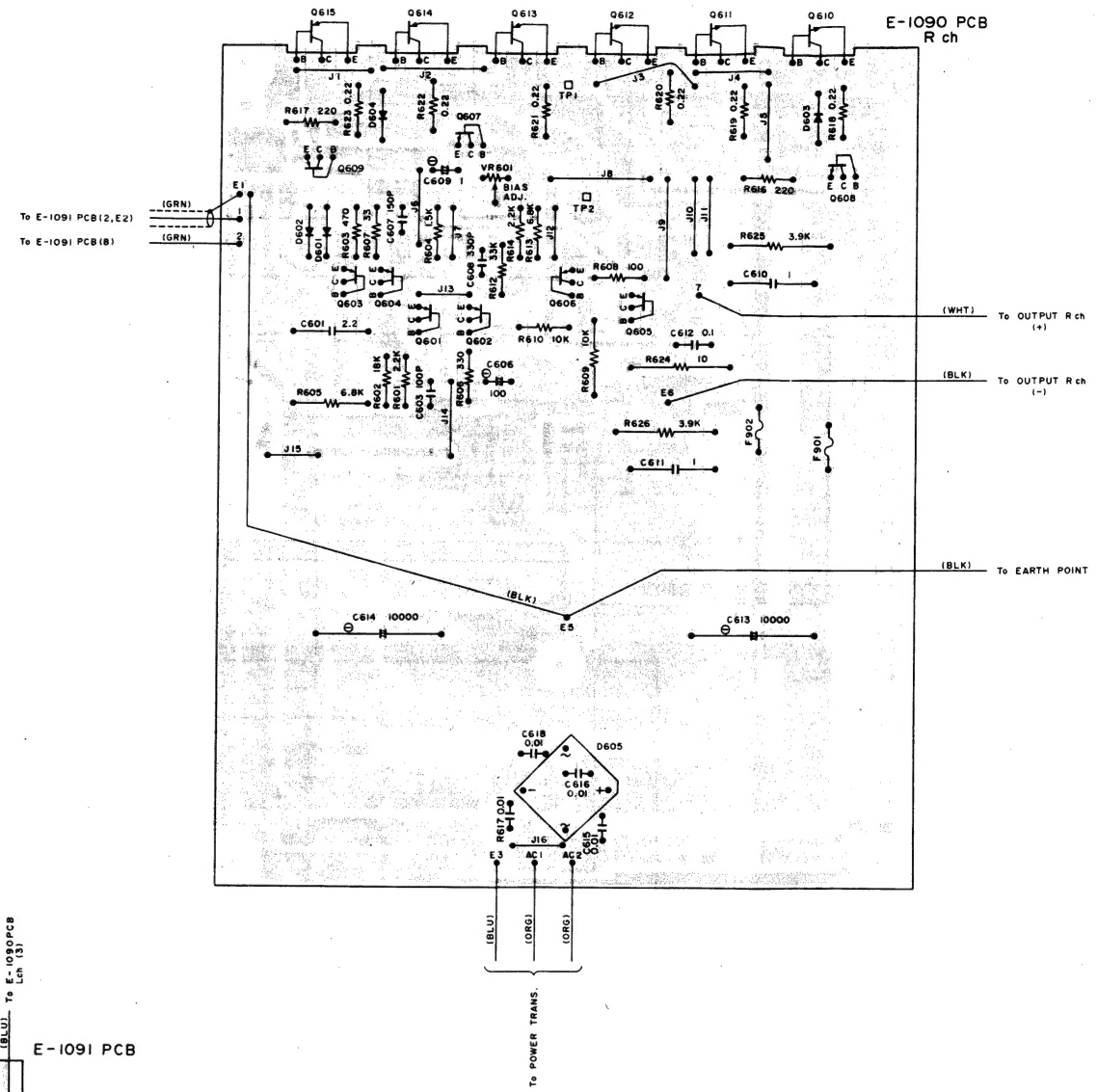
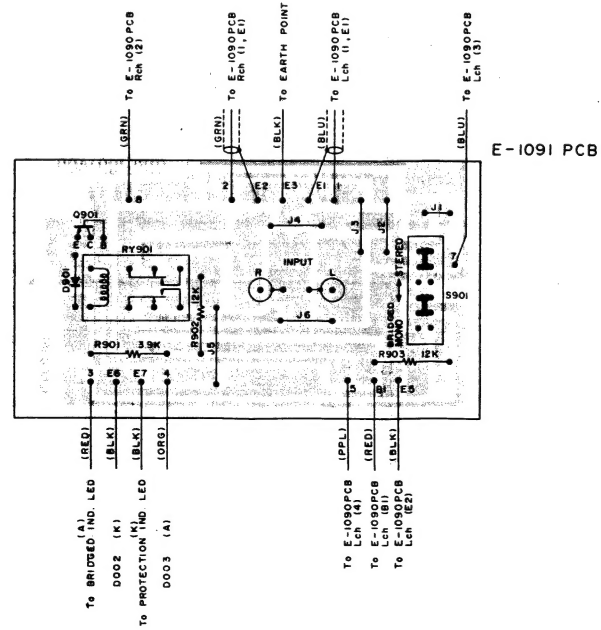
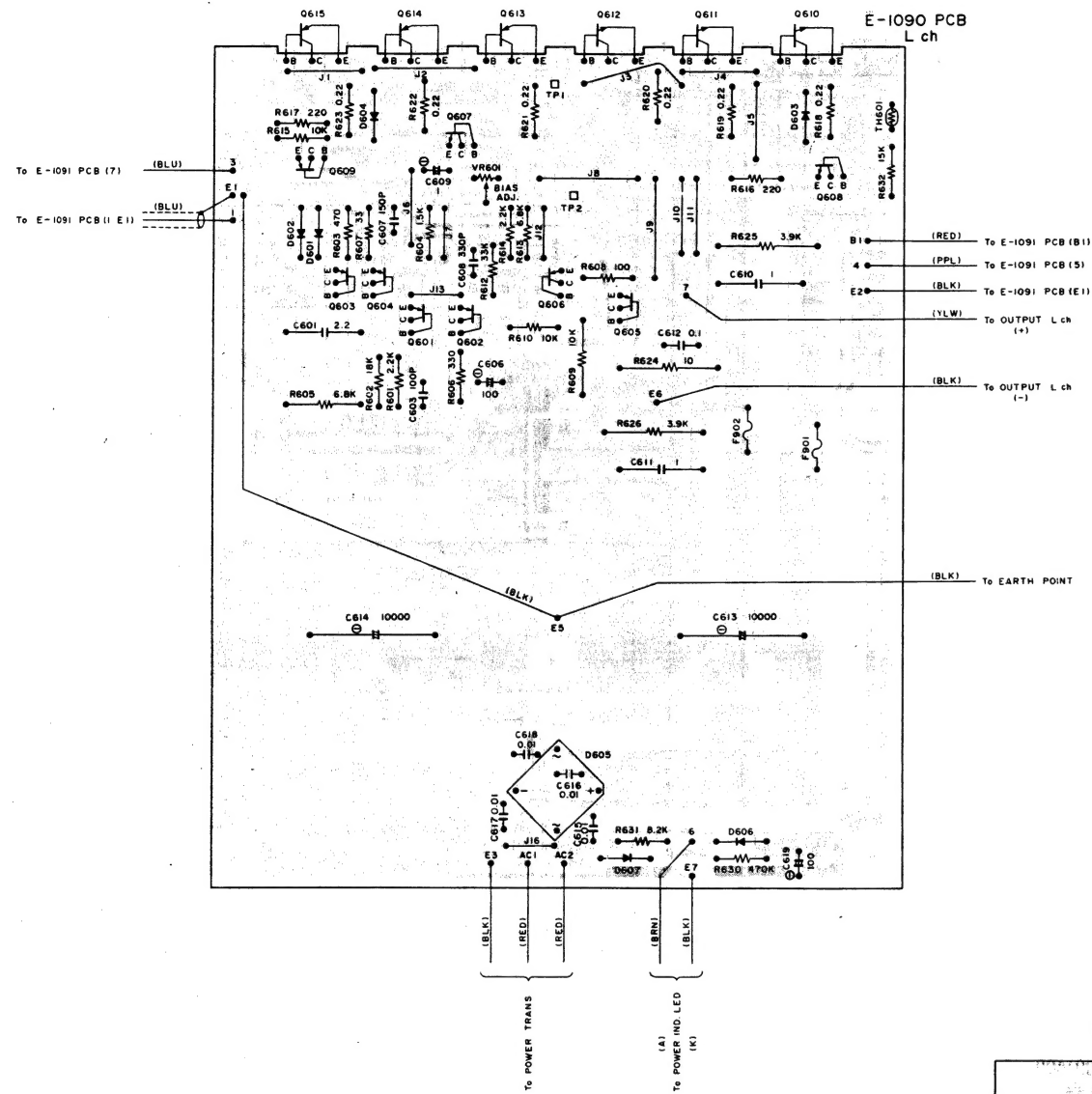
### Power Amplifier Bias Adjustment

Instruments : DC milli-voltmeter

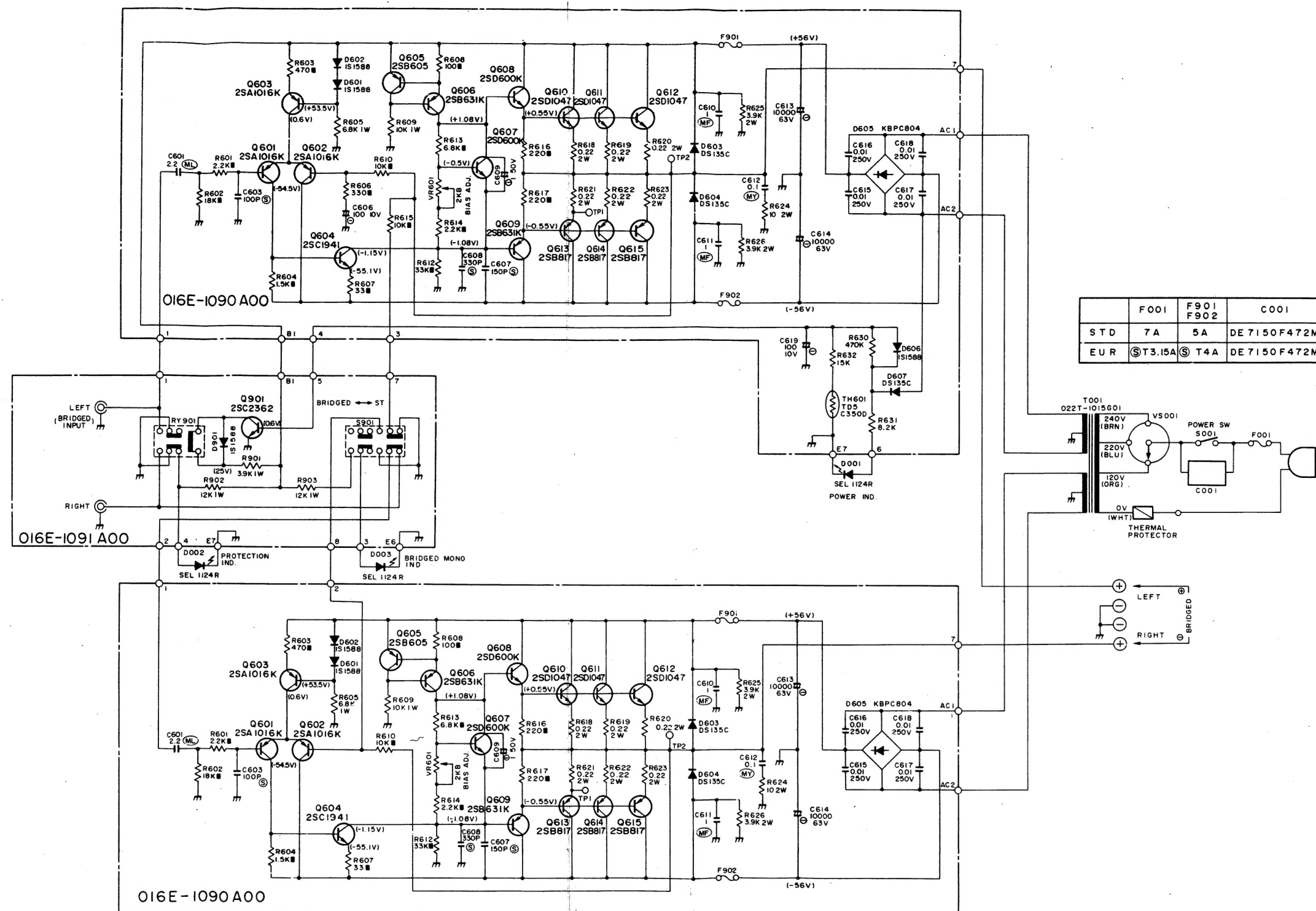
Notes : Prior to Bias Adjustment, run about 5 minutes with rated output (8 ohms) and warm up Power Transistor and Heat Sink. Set input off.

Step	Coupling		Location	Adjust	Adjust for
	Plus Lead	Minus Lead			
1	TP2	TP1	E-1090 PCB (Lch)	VR601	DC milli-voltmeter reads 5 mV
2	TP2	TP1	E-1090 PCB (Rch)	VR601	

## Wiring Diagram



# Schematic Diagram



RB-870BX

## (RESISTORS)

5% TOLERANCE UNLESS OTHERWISE NOTED.

K . . . . . KILO OHM

■ . . . . . FIXED PRECISION METAL FILM RESISTORS. (F): 1%

NON MARK . . . . . LOW NOISE TYPE CARBON RESISTORS. 1/4 WATT

## (CAPACITORS)

⑤ . . . . . POLYSTYRENE FILM CAPACITORS.

MY . . . . . MYLAR FILM CAPACITORS.

MP . . . . . METALIZED POLYESTER FILM CAPACITORS.

⌐ . . . . . ELECTROLYTIC CAPACITORS.

NON MARK . . . . . CERAMIC CAPACITORS.

ML . . . . . METAL LAYER CAPACITORS.

• UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITANCE VALUES ARE EXPRESSED IN MFD.

• VOLTAGE READING WITH VTVM FROM THE POINT SHOWN TO THE CHASSIS GROUND. (LINE VOLTAGE 120 VOLTS)

• VOLTAGE READING MAY  $\pm 20\%$

